DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al. (5,822,487) in view of Orita (US 2002/0134114), and Hart, Jr. et al. (5,418,881). Regarding claim 1 and 2, Evans et al. disclose a method for drawing an optical-fiber perform comprising a step of heating one end of the optical-fiber perform for melting and drawing the end of the optical-fiber perform (col. 4 lines 23-26, Fig. 5) and first and second spin-forming steps for applying a spin to the optical fiber in a predetermined direction by passing through a series of roller, *at least one of which is rotated* (col. 4 lines 29-33, col. 5 lines 9-11, Fig. 5). Evans et al. offer the specific example of a spin at a constant rate, as exemplified by the tilted roller 22 in figure 5. Although Evans et al. '487 suggest using more than one roller for twisting, it is not explicit. Orita teach a first spin-forming step and a second spin-forming step for providing a first and second twist to an optical fiber by utilizing a first and second wheel that oscillates in opposite directions ([0018], [0019], [0020], [0023], [0036], figures 1 & 7). Basically Orita teaches the utilization of the two oscillating wheels to impose a spin on optical fiber; in this case, two spins, since there are two wheels acting on the fiber in sequence. Although the wheels of Orita are oscillating and not tilted or swinging, Hart, Jr. et al. teach many well known ways for imparting spin on fiber, including tilting a

wheel at a predetermined angle θ to impose a twist at a constant rate on the fiber in one direction and also a different twisting step comprising oscillating a wheel through the angle 2θ with respect to the drawing axis while rotating the wheel to impose a second twist in the counterclockwise and clockwise directions (col. 4 lines 26-57, 60-61, 66-68, col. 5 lines 1-9, figures 3 & 4). Evans et al. also suggest twisting in one direction (as can be done with the tilting of one wheel) will reduce the time delay differences between the two polarization modes, but twisting in both directions will compensate for the time differences (col. 3, lines 21-25). Evans further discloses the fiber as having asymmetrical twist throughout its length, implying a spin that is applied at a changing rate and that the fiber is twisted with different number of turns in the first and second spin-forming steps (col. 4, lines 55-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Hart, Jr. et al. of employing well known different ways of imposing a spin on fiber (i.e. tilting of the wheel, swinging of the wheel) with the two twisting wheels and the spin-forming steps of Orita in the suggested fiber twisting device of Evans et al. in order reduce polarization mode dispersion in the optical fiber, as taught by Hart, Jr. et al. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to expect that the act of the first and second spin forming steps would inherently result in a spin-minimizing polarization mode dispersion to the optical fiber.

3. Regarding claims 3-5, Evans mentions a spin function as a linear superposition (summation) of constant and sinusoidal functions (col. 5 lines 21-23), such as

$S(z) = \alpha_0 Sin(2\pi f_0) + n\alpha$, where $n\alpha$ is the constant or integer that can define the first spin-forming step and $\alpha_0 Sin(2\pi f_0)$ is the sinusoidal function that can define the second spin-forming step.

Response to Arguments

1. Applicant's arguments filed January 7, 2008 have been fully considered but they are not persuasive. In regards to the Applicant's arguments in section (2), Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Furthermore, the applicant argues that " there is nothing inherent with regard to a constant rate first spin-forming step, and a changing rate spin-forming second step." The Examiner has not made such an allegation; but instead, presented an inherency to minimizing polarization mode dispersion in the fiber as a result of the spin forming steps.

Conclusion

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Queenie Dehghan whose telephone number is (571)272-8209. The examiner can normally be reached on Monday through Friday 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven P. Griffin/
Supervisory Patent Examiner, Art Unit 1791

Q Dehghan